

Application No. 09/899,341  
Filed: July 5, 2001  
TC Art Unit: 2633  
Confirmation No.: 2622

REMARKS

This Amendment is filed in response to the Office Action dated April 22, 2004. Reconsideration is respectfully requested.

The status of the claims is as follows:

Claim 1 is currently pending.

Claim 1 stands rejected.

Claim 1 has been amended.

The Examiner has rejected claim 1 under 35 U.S.C. 102(e) as being anticipated by Sharma et al. (USP 6,331,906). The Applicants respectfully submit, however, that the Sharma reference does not disclose all of the limitations of claim 1, and therefore the rejection of claim 1 under section 102 of the Patent Laws is unwarranted.

Specifically, the Sharma reference does not disclose a plurality of failure detectors at predetermined positions and a plurality of protection switching elements at predetermined network connections in each of the link, wavelength, and fiber layers of a wavelength division multiplexing (WDM) optical communications network, as recited in claim 1. Sharma et al. also fail to disclose a first set of intralayer communication channels within each of the link, wavelength, and fiber layers of the WDM network for sending failure signals between the failure detectors

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and the protection switching elements in respective ones of the link, wavelength and fiber layers, and a second set of interlayer communication channels between adjacent ones of the link, wavelength, and fiber layers of the WDM network for sending failure signals between the failure detectors and the protection switching elements in adjacent ones of the link, wavelength and fiber layers, as recited in claim 1. Such limitations are described throughout the instant application, for example, see page 2, line 18, to page 3, line 14, of the application.

In contrast, the Sharma reference merely describes techniques for protecting and restoring optical communications networks that employ lower layer communication channels such as fiber layer channels. For example, Sharma et al. disclose an optical switching node (OSN) that includes control logic and additional elements to implement a restoration supervisory channel for carrying supervisory messages over the fiber network itself (see column 16, lines 15-27, of Sharma et al.). Like Sharma et al., the Applicants have disclosed that the fiber layer may use the optical supervisory channel (OSC) for communicating protection information (see page 6, lines 28-30, of the application). The Applicants have recognized, however, that because there are many components in the fiber layer, it may be impractical to use the

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OSC as a communication channel to achieve rapid protection switching. For this reason, higher layer communication channels are preferred for protection switching purposes because the affected components may be directly connected and the higher layers contain less overhead (see page 7, lines 14-27, of the application).

For example, when a failure detector at the receiving end of a layer detects a communication failure, the Applicants' system is operable to generate an upstream signaling message, and to send the message to a peer using an upstream channel. The form of the signaling message varies depending on the layer employed. In the event the higher link layer is employed, the message takes the form of a series of bytes in the FEC channel. In the event the higher wavelength layer is employed, the message takes the form of a pattern of modulation of an optical carrier (see page 10, lines 15-27, of the application).

Clearly, the Sharma reference does not contemplate using higher layer communication channels such as those within the link and wavelength layers for protection switching purposes. Instead, Sharma et al. merely disclose the OSN configured to implement a restoration supervisory channel within the fiber layer. To allow the OSN to operate in heterogeneous networks, Sharma et al. have

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provided the OSN with a switching state that permits traffic on the protection fibers to bypass the terminal equipment at the associated node (see column 11, lines 26-29, of Sharma et al.). However, such protection switching occurs within the fiber layer and does not employ either one of the higher wavelength and link layers, as described and claimed in the instant application. Accordingly, the Sharma reference does not disclose the failure detectors, the protection switching elements, the intralayer communication channels, and the interlayer communication channels operable to implement protection switching using the fiber layer and the higher wavelength and link layers, as recited in claim 1.

Because the Sharma reference does not disclose a plurality of failure detectors at predetermined positions and a plurality of protection switching elements at predetermined network connections in each of the link, wavelength, and fiber layers of a WDM optical communications network, a first set of intralayer communication channels within each of the link, wavelength, and fiber layers of the WDM network, and a second set of interlayer communication channels between adjacent ones of the link, wavelength, and fiber layers of the WDM network, as recited in claim 1, the Sharma reference does not anticipate claim 1. Accordingly, the

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Applicants respectfully submit that the rejection of claim 1 under 35 U.S.C. 102 is unwarranted and should be withdrawn.

The Applicants respectfully point out that a preliminary amendment was filed in the above-referenced application on February 25, 2002, including new claims 2-15. The Applicants' Attorney placed a telephone call to the Examiner on May 13, 2004, to inform him that the preliminary amendment including new claims 2-15 was not considered when the official action was issued. The Examiner suggested that the Applicant file the instant response to the official action. The Examiner also indicated that a complete examination of all of the claims 1-15 would be made in the next official action.

In view of the foregoing, it is respectfully submitted that the present application is in a condition for allowance. Early and favorable action is respectfully requested.

The Examiner is encouraged to telephone the undersigned Attorney to discuss any matter that would expedite allowance of

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the present application.

Respectfully submitted,

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